# HRL

## Hybrid Robot

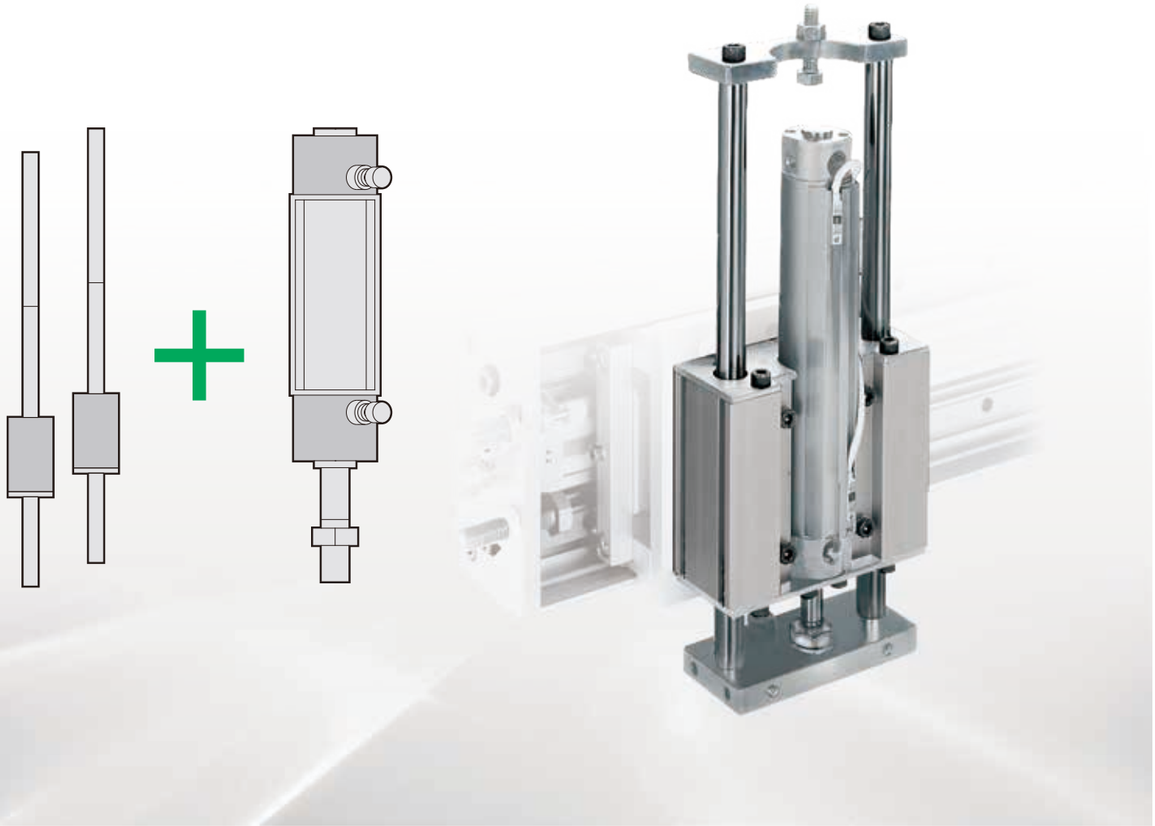
CONTENTS



| Model No. | Payload (kg) | Basic cylinder | Stroke (mm) | | Page |
|---|---|---|---|---|---|
| | | | Basic body shape | Long body shape | |
| HRL-1□ | 5, 10, 15, 25, 50, 65 | SCM | 50, 75, 100, 125, 150, 200, 250, 300 | 350, 400, 450, 500, 550, 600 | 1120 |

# Thin, high-rigidity Z-axis module Supports long stroke of Max 600 mm

Z-axis module that performs conveyance work closest to the target object. The HRL series meets many functional requirements such as appropriate rigidity, thinness, space saving, as well as shock absorption, non-rotation, and fall prevention.



**Guide rod and cylinder integrated.**
**Reduction of customer assembly man-hours.**

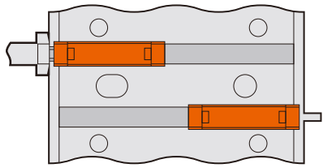
## Optimal functions for Z-axis module

### With stroke adjustment

Stroke adjustment range:
0 to 10 mm (Push side)

### Built-in shock suppressor

Since a shock absorber is standardly equipped, shock and vibration during stopping can be absorbed.



### Ball bush adopted

Since the two guide rods are supported by ball bushes, they operate smoothly and can maintain high positioning accuracy.

### Drop prevention option

The lock operates when air is exhausted at the head end of the stroke. Damage to workpieces, jigs, etc. due to falling of the Piston Rod can be prevented.

### With Speed Controller

Since a speed controller is included, there is no need to arrange it separately.

Long stroke compatible guided cylin-

### STG Series

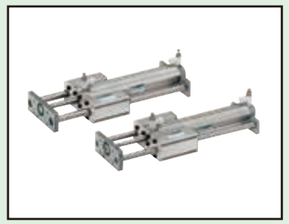
Max Stroke
400 mm

### HRL Series

Max Stroke
600 mm

## HRL Series Product System

| Model No. | Payload (kg) | Basic Cylinder | Stroke (mm) | |
|---|---|---|---|---|
| | | | Standard body | Long body |
| HRL-1  | 5 10 15 25 50 65 | SCM | 50 75 100 125 150 200 250 300 | 350 400 450 500 550 600 |

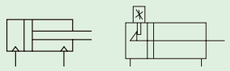


Hybrid Robot Single axis unit

# HRL-1 Series

●Payload: 5, 10, 15, 25, 50 ,65 kg

Circuit Diagram
Code



RoHS

## Model No. Notation

Without Switch
(Built-in magnet for switch)
*1

HRL-1 L - 05 - 350 - Q

Model No. ❶ ❷ ❸ ❹

With Switch
(Built-in magnet for switch)

HRL-1 L - 05 - 350 - Q - T0H3 - R

Model No. ❷Payload (Vertical) ❹Drop prevention mechanism ❻Number of Switches
❶Basic shape ❸Stroke ❺Switch Model No.

Note: In the case of without switch, the presence or absence of a switch rail for the cylinder varies depending on the presence or absence of a fall prevention mechanism.
Without position locking mechanism: Without switch rail
With position locking mechanism: With switch rail

### ❶Basic shape

| Code | Content | |
|---|---|---|
| Blank | Basic type |  |
| L | Long body |  |
| F | Basic type front flange |  |
| LF | Long body front flange |  |

### ❷Payload (Vertical)

| Code | Content |
|---|---|
| 05 | 5 kg |
| 10 | 10 kg |
| 15 | 15 kg (Guide rod diameter) (6 mm) |
| 15H | 15 kg (Guide rod diameter) (20 mm) |
| 25 | 25 kg |
| 50 | 50 kg |
| 65 | 65 kg |

### ❸Stroke (mm)

| Stroke | Content |
|---|---|
| [Basic body shape] (Blank, F) | |
| 50 | 50 |
| 75 | 75 |
| 100 | 100 |
| 125 | 125 |
| 150 | 150 |
| 200 | 200 |
| 250 | 250 |
| 300 | 300 |
| [Long body shape] (L, LF) | |
| 350 | 350 |
| 400 | 400 |
| 450 | 450 |
| 500 | 500 |
| 550 | 550 |
| 600 | 600 |

### ❹Drop prevention mechanism

| Code | Content | |
|---|---|---|
| Blank | None | |
| Q | Yes |  |

*1

*1: The drop prevention mechanism can only be mounted on the head side of the cylinder.





### ❺Switch Model No.

For switch details, refer to P. 1457. Switches are shipped with the product.

| Contact | Indicator LED Special Function | Wiring (Output) | Load Voltage (V) AC | Load Voltage (V) DC | Load Current (mA) AC | Load Current (mA) DC | Lead Wire *1 Straight | Lead Wire *1 L-shape | |
|---|---|---|---|---|---|---|---|---|---|
| Solid State | 1-Color | 2-wire | 85 to 265 | — | 5 to 100 | — | T1H□ | T1V□ |  |
| | | | — | 10 to 30 | — | 5 to 20 *2 | T2H□ | T2V□ | |
| | | 3-wire (NPN) | — | 30 or less | — | 100 or less | T3H□ | T3V□ |  |
| | | 3-wire (PNP) | — | | — | | T3PH□ | T3PV□ | |
| | 2-Color | 2-wire | — | 24 ± 10% | — | 5 to 20 | T2WH□ | T2WV□ | |
| | | 3-wire (NPN) | — | 30 or less | — | 50 or less | T3WH□ | T3WV□ | |
| | 2-Color Improved Water Resistance | 2-wire | — | 24 ± 10% | — | 5 to 20 | T2WLH□ | T2WLV□ |  *3 *4 |
| | For 2-color AC Magnetic Field | | — | 24 ± 10% | — | | T2YD□ | – |  |
| | | | — | | — | | T2YDT□ | – | |
| | 1-Color Off-Delay Type | | — | 10 to 30 | — | 5 to 20 *2 | T2JH□ | T2JV□ |  |
| | 1-Color Flexible Lead Wire Type | | — | 10 to 30 | — | | T2HR3 | T2VR3 |  |
| Reed | 1-Color | 2-wire | 110 | 12/24 | 7 to 20 | 5 to 50 | T0H□ | T0V□ |  |
| | Without Indicator Lamp | | 110 | 5/12/24 | 20 or less | 50 or less | T5H□ | T5V□ | |
| | 1-Color | | 110/220 | 12/24 | 7 to 20 / 7 to 10 | 5 to 50 | T8H□ | T8V□ |  |

*1: For switch model No. "□", select the code from the "Lead wire length / Connector specifications" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder.
*4: Cannot be selected for drop prevention mechanism (Q).
*5: Switches other than the Model No. listed above are also available. (Custom Product) For details, refer to P. 1457.

*Lead wire length, connector specification

| Code | Content |
|---|---|
| Blank | 1 m (Standard) |
| 3 | 3 m (Option) |
| 5 | 5 m (Option) |
| W | M8 Connector, 1PIN (+), 4PIN (−) Lead Wire 0.3 m |

*5

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H3
5 m T0H5

### ❻Number of Switches

| Code | Content |
|---|---|
| R | With 1 pc on rod side |
| H | With 1 pc on head side |
| D | With 2 pcs |
| T | With 3 pcs |

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Structure usable in secondary battery manufacturing processes

HRL-1 – .... – P4*

* Please contact us for details.

## Specifications

| Item | | HRL-1□-05 | HRL-1□-10 | HRL-1□-15 | HRL-1□-15H | HRL-1□-25 | HRL-1□-50 | HRL-1□-65 |
|---|---|---|---|---|---|---|---|---|
| Payload (Vertical) *1 kg | | 5 | 10 | 15 | | 25 | 50 | 65 |
| Basic cylinder | | SCM-00-20D | SCM-00-25D | SCM-00-32D | | SCM-00-40D | SCM-00-50D | SCM-00-63B |
| Bore Size mm | | 20 | 25 | 32 | | 40 | 50 | 63 |
| Guide rod diameter mm | | 13 | 13 | 16 | 20 | 20 | 25 | 30 |
| Speed mm/s | | 50 to 500 | | | | | | |
| Operating Pressure MPa | | 0.3 to 0.7 | | | | | | |
| Stroke adjustment range *2 mm | | 0 to -10 mm (Push side) | | | | | | |
| Shock absorber *3 | | NCK-00-0.7 | | NCK-00-1.2 | | NCK-00-12 | | |
| Product weight kg | Basic type | 2+(0.0033 x stroke) | 2.1+(0.0037×Stroke) | 2.8+(0.0051×Stroke) | 2.9+(0.0069×Stroke) | 10.8+(0.0081×Stroke) | 11.9+(0.0122×Stroke) | 13.3+(0.02×Stroke) |
| | Long body type | 2.3+(0.0033×Stroke) | 2.4+(0.0037×Stroke) | 3.1+(0.0051×Stroke) | 3.2+(0.0069×Stroke) | 12.5+(0.0081×Stroke) | 13.6+(0.0122×Stroke) | 15+(0.02 x stroke) |
| Moving part weight kg | Basic type | 0.9+(0.0025×Stroke) | 0.9+(0.0027×Stroke) | 1.3+(0.0041×Stroke) | 1.6+(0.0059×Stroke) | 4.1+(0.0066×Stroke) | 5.2+(0.0102×Stroke) | 6.1+(0.0137×Stroke) |
| | Long body type | 1.0+(0.0025×Stroke) | 1.0+(0.0027×Stroke) | 1.5+(0.0041×Stroke) | 1.8+(0.0059×Stroke) | 4.4+(0.0066×Stroke) | 5.7+(0.0102×Stroke) | 6.8+(0.0137×Stroke) |
| Speed controller *4 | | SC3W-6-6 | | | | SC3W-6-8 | SC3W-8-8 | |

*1: Payload varies depending on air pressure, speed, and absorbed energy. (Numerical values are for reference only.)
*2: Stroke adjustment is not possible on the retraction side.
*3: Shock absorber is built into the body part. Note that please use below the following with respect to the allowable value of the shock absorber at the operating speed and air pressure.
- HRL-1□Pull side of F-05/10/15/15H...70% or less
- HRL-1□Pull side of F-25/50/65...65% or less
- Other than above... 74% or less

*4: Speed controller is an included part.

MEMO

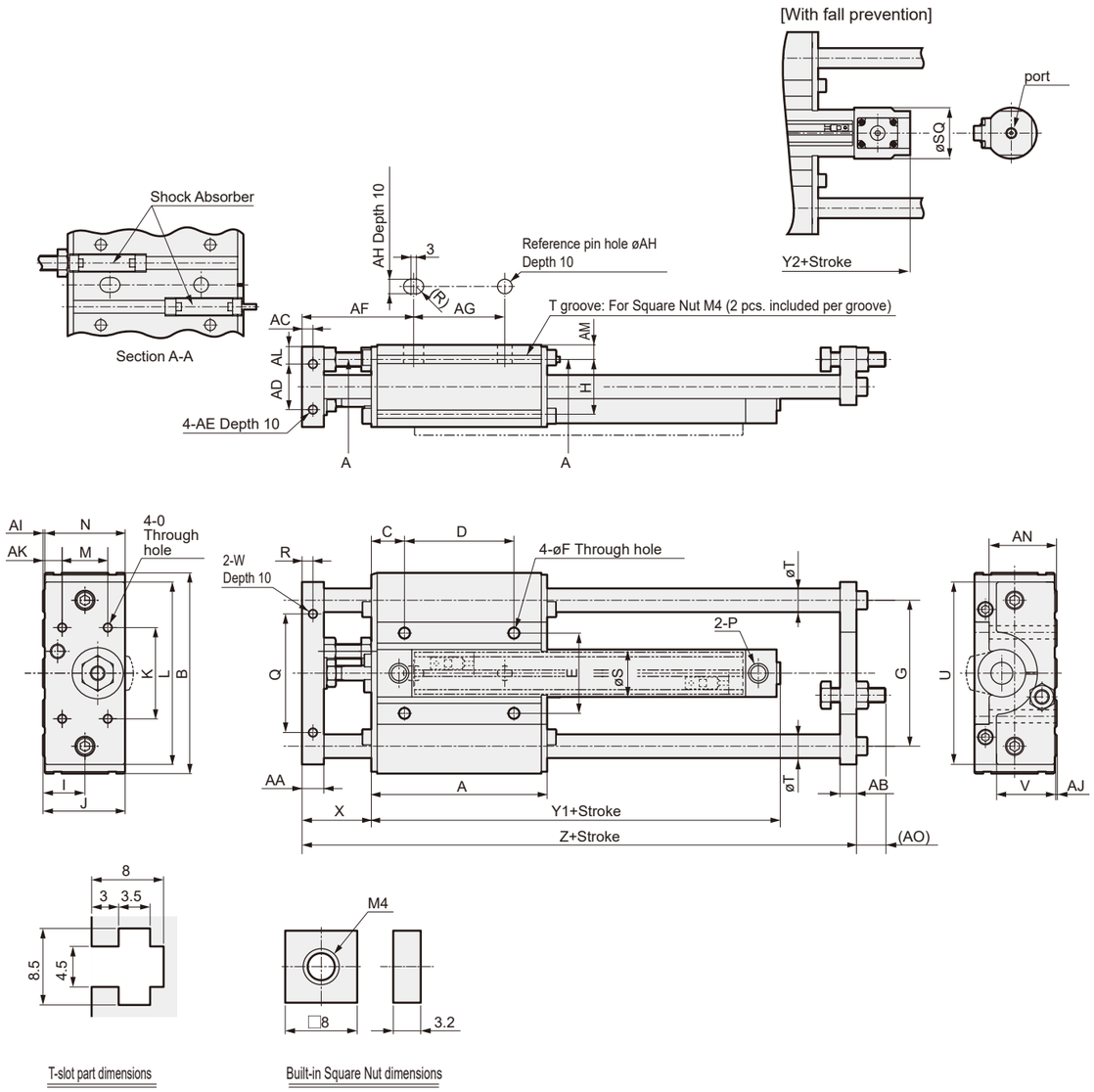




Special
MVC
STK
MCP
GLC
BBS
NHS
HR
LN
Cylinder Switch
Ending

## Dimensional Drawings

● HRL-1-05 to 15H (basic body)




T-slot part dimensions

Built-in Square Nut dimensions

| Code / Model No. | Stroke Range (mm) | A | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO *1 | B | C | D | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1-05 | 50, 75, | 96.4 | 12 | 9 | 6 | 25 | M5 | 61.2 | 50 | 8 +0.03 0 | 1 | 1 | 10.5 | 9.5 | 8 | 37 | 15.9 | 110 | 18.2 | 60 | 44 |
| -10 | 100, 125, | | | | | | | | | | | | | | | | | | | | |
| -15 | 150, 200, | | | | | | | | | | | | | | | | | 130 | | | 52 |
| -15H | 250, 300 | | | | | | | | | | | | | | | | | | | | |

| Code / Model No. | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | SQ | T | U | V | W | X | Y1 | Y2 | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1-05 | 6 | 80 | 30 | 23 | 45 | 50 | 100 | 25 | 44 | M5 | Rc1/8 | 65 | 6 | 26 | 30 | 13 | 100 | 32 | M5 | 38 | 74.2 | 94.2 | 154 |
| -10 | | | | | | | | | | | | | | 31 | 35 | | | | | | | | |
| -15 | 7 | 94 | | | | 60 | 120 | | | | | 75 | | 38 | 38.1 | 16 | 120 | 38 | | | 76.2 | 96.2 | |
| -15H | | | | | | | | | | | | | | | | 20 | | | | | | | |

*1: AO dimension indicates the dimension at the time of shipment.

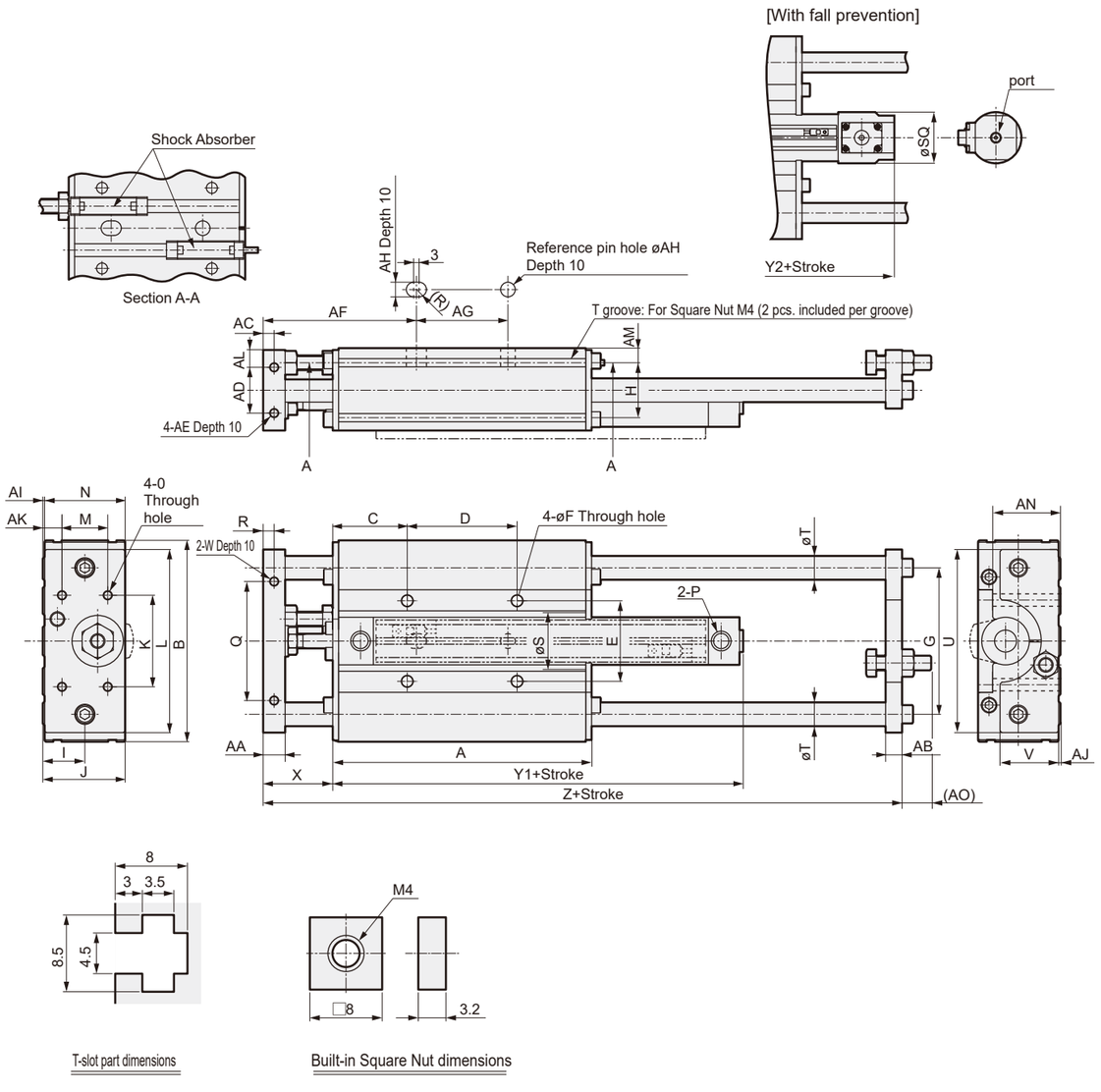
***2: For dimensions with each switch, please refer to P. 1130, 1131.**





## Dimensional Drawings

● HRL-1L-05 to 15H (long body)




T-slot part dimensions

Built-in Square Nut dimensions

| Code / Model No. | Stroke Range (mm) | A | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO *1 | B | C | D | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1L-05 | 350, 400, | 141.4 | 12 | 9 | 6 | 25 | M5 | 83.7 | 50 | 8 +0.03 0 | 1 | 1 | 10.5 | 9.5 | 8 | 37 | 15.9 | 110 | 40.7 | 60 | 44 |
| -10 | 450, 500, | | | | | | | | | | | | | | | | | | | | |
| -15 | 550, 600 | | | | | | | | | | | | | | | | | 130 | 45.7 | | 52 |
| -15H | | 151.4 | | | | | | 88.7 | | | | | | | | | | | | | |

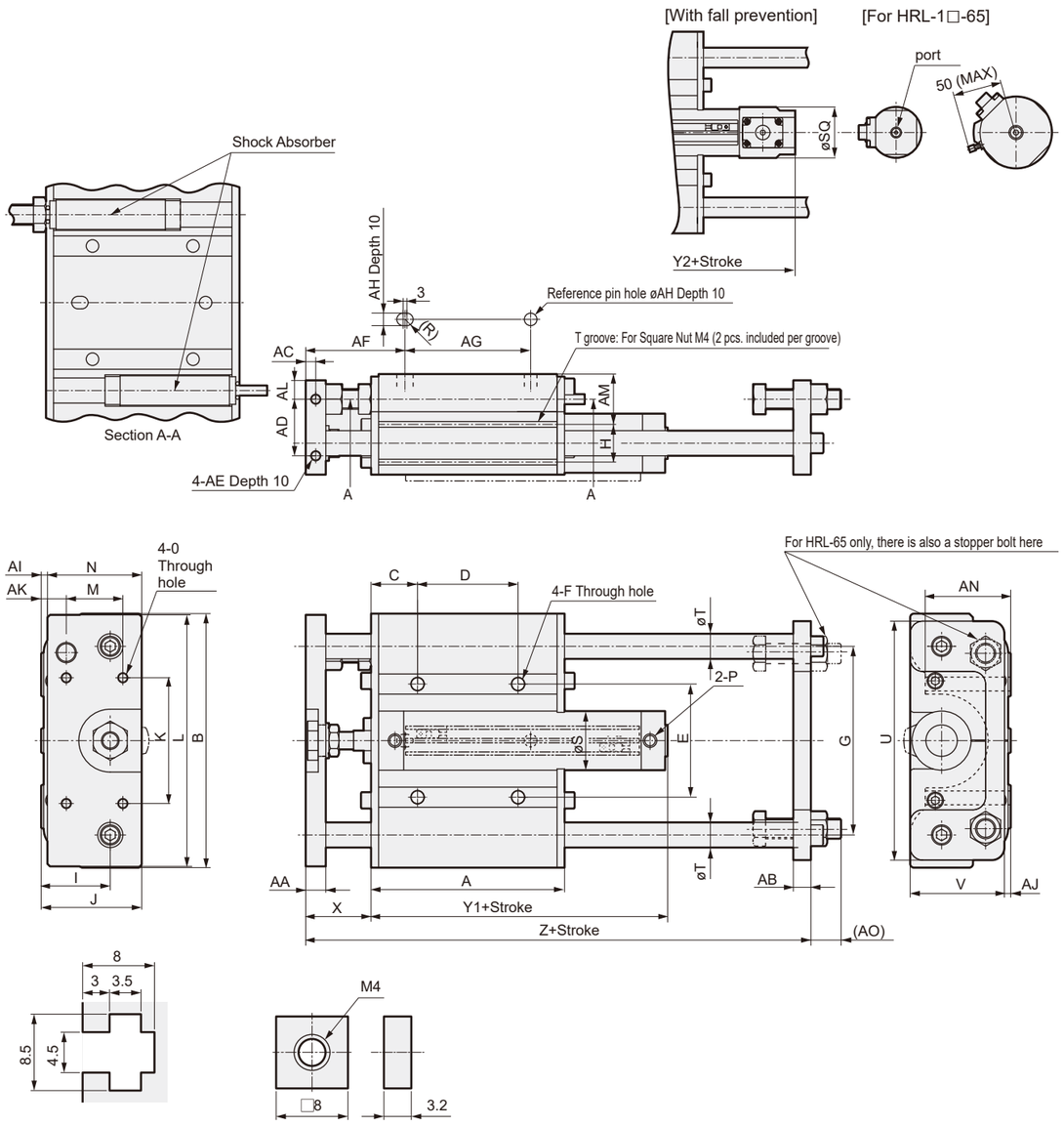
| Code / Model No. | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | SQ | T | U | V | W | X | Y1 | Y2 | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1L-05 | 6 | 80 | 30 | 23 | 45 | 50 | 100 | 25 | 44 | M5 | Rc1/8 | 65 | 6 | 26 | 30 | 13 | 100 | 32 | M5 | 38 | 74.2 | 94.2 | 199 |
| -10 | | | | | | | | | | | | | | 31 | 35 | | | | | | | | |
| -15 | 7 | 94 | | | | 60 | 120 | | | | | 75 | | 38 | 38.1 | 16 | 120 | 38 | | | 76.2 | 96.2 | 209 |
| -15H | | | | | | | | | | | | | | | | 20 | | | | | | | |

*1: AO dimension indicates the dimension at the time of shipment.

***2: For dimensions with each switch, please refer to P. 1130, 1131.**

## Dimensional Drawings

● HRL-1-25 to 65 (basic body)




T-slot part dimensions

Built-in Square Nut dimensions

| Code / Model No. | Stroke Range (mm) | A | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO *1 | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1-25 | 50, 75, 100, | 154 | 16 | 14 | 8 | 45 | M8 | 79 | 100 | $10^{+0.03}_{0}$ | 5 | 5 | 20 | 15 | 40 | 68 | 24 | 202 | 37 | 80 |
| -50 | 125, 150, 200, | | 19 | | 9.5 | | | 82 | | | | | | | | | | | | |
| -65 | 250, 300 | | | | | | | | | | | 2 | | | | | | | | |

| Code / Model No. | E | F | G | H | I | J | K | L | M | N | O | P | R | S | SQ | T | U | V | X | Y1 | Y2 | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1-25 | 90 | 11 | 150 | 30 | 55 | 80 | 100 | 200 | 45 | 75 | M8 | Rc1/8 | 5 | 47 | 51 | 20 | 190 | 75 | 52 | 86 | 121 | 252 |
| -50 | | | | | | | | | | | | Rc1/4 | | 58 | 60 | 25 | | | 55 | 98 | 138 | 255 |
| -65 | | | | | | 92 | | | | | | | | 72 | 72.1 | 30 | | 78 | | | | |

*1: AO dimension indicates the dimension at the time of shipment.

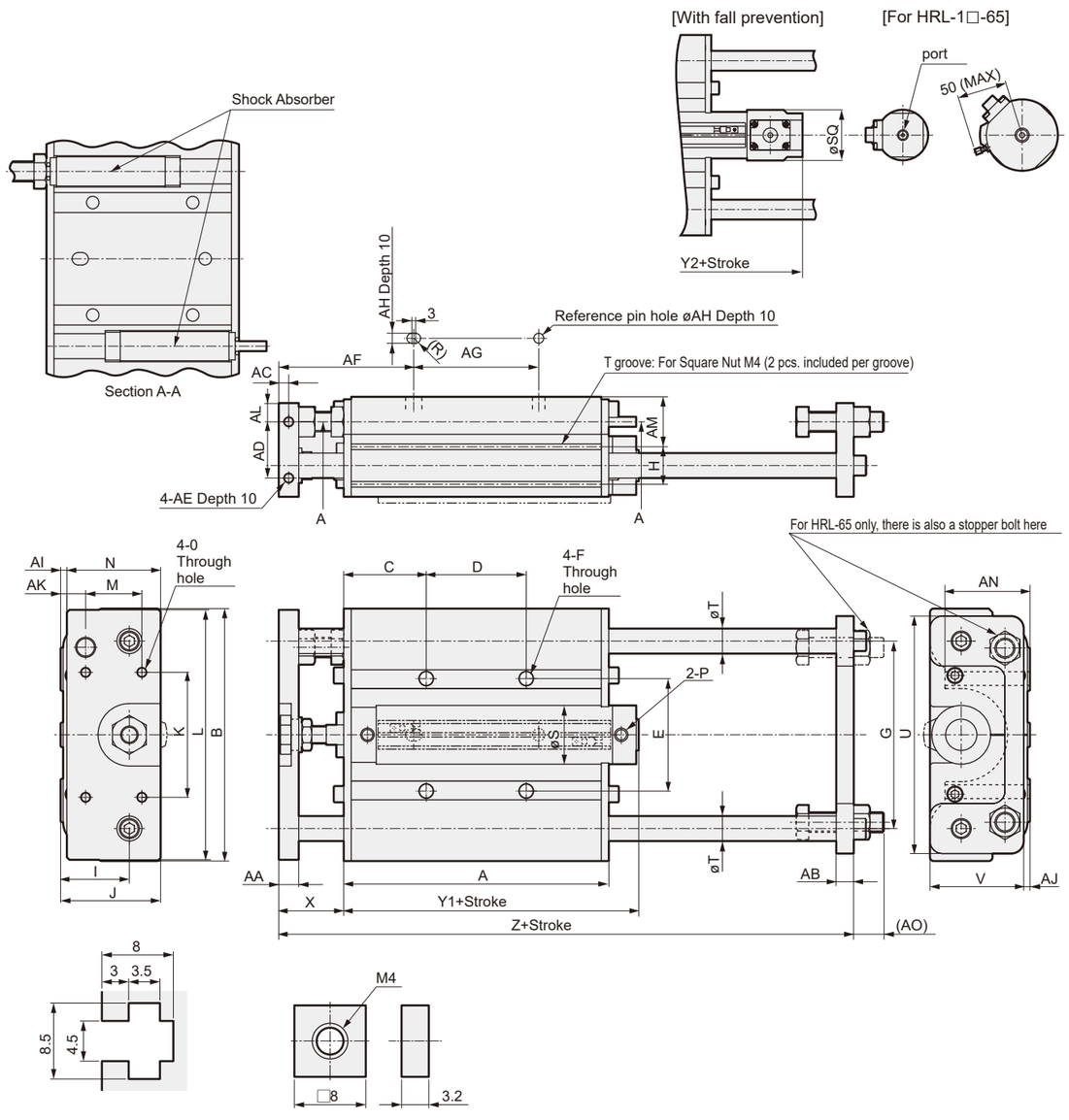
***2: For dimensions with each switch, please refer to P. 1130, 1131.**





## Dimensional Drawings

● HRL-1L-25 to 65 (long body)




T-slot part dimensions

Built-in Square Nut dimensions

| Code / Model No. | Stroke Range (mm) | A | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO *1 | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1L-25 | 350, 400, | 212 | 16 | 14 | 8 | 45 | M8 | 108 | 100 | $10^{+0.03}_{0}$ | 5 | 5 | 20 | 15 | 40 | 68 | 24 | 202 | 66 | 80 |
| -50 | 450, 500, | | 19 | | 9.5 | | | 111 | | | | | | | | | | | | |
| -65 | 550, 600 | | | | | | | | | | | 2 | | | | | | | | |

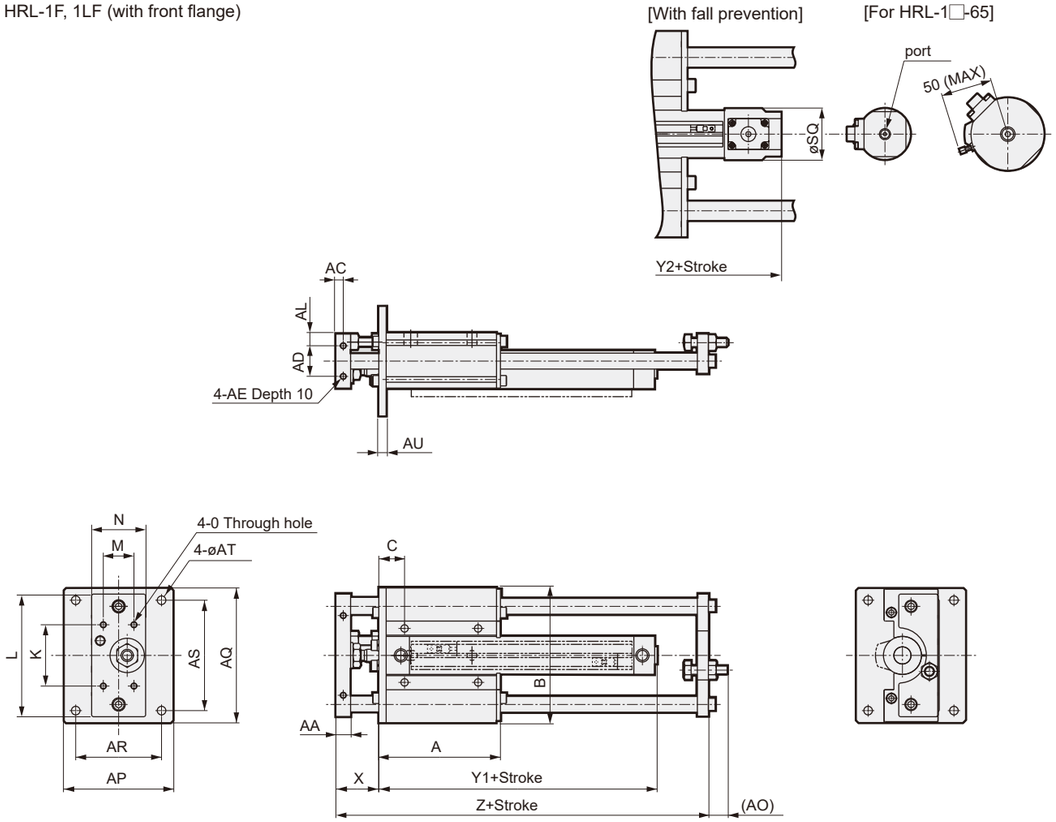
| Code / Model No. | E | F | G | H | I | J | K | L | M | N | O | P | R | S | SQ | T | U | V | X | Y1 | Y2 | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1L-25 | 90 | 11 | 150 | 30 | 55 | 80 | 100 | 200 | 45 | 75 | M8 | Rc1/8 | 5 | 47 | 51 | 20 | 190 | 75 | 52 | 86 | 121 | 310 |
| -50 | | | | | | | | | | | | Rc1/4 | | 58 | 60 | 25 | | | 55 | 98 | 138 | 313 |
| -65 | | | | | | 92 | | | | | | | | 72 | 72.1 | 30 | | 78 | | | | |

*1: AO dimension indicates the dimension at the time of shipment.

***2: For dimensions with each switch, please refer to P. 1130, 1131.**

## Dimensional Drawings

● HRL-1F, 1LF (with front flange)




| Code / Model No. | A: Basic type | A: Long body type | B | C: Basic type | C: Long body type | K | L | M | N | O | X | Y | Z: Basic type | Z: Long body type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1□F-05 | 99.2 | 144.2 | 110 | 21 | 43.5 | 50 | 100 | 25 | 44 | M5 | 35 | 77 | 154 | 199 |
| -10 | | | | | | | | | | | | | | |
| -15 | | 154.2 | 130 | | 48.5 | 60 | 120 | | | | | 79 | | 209 |
| -15H | | | | | | | | | | | | | | |
| -25 | 160 | 218 | 202 | 43 | 72 | 100 | 200 | 45 | 75 | M8 | 46 | 92 | 252 | 310 |
| -50 | | | | | | | | | | | 49 | 104 | 255 | 313 |
| -65 | | | | | | | | | | | | | | |

| Code / Model No. | AA | AC | AD | AE | AL | AO *1 | AP | AQ | AR | AS | AT | AU | Y1 | Y2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HRL-1□F-05 | 12 | 6 | 25 | M5 | 9.5 | 15.9 | 90 | 110 | 70 | 90 | 7 | 6 | 74.2 | 94.2 |
| -10 | | | | | | | | | | | | | | |
| -15 | | | | | | | | 130 | | 100 | | | 76.2 | 96.2 |
| -15H | | | | | | | | | | | | | | |
| -25 | 16 | 8 | 45 | M8 | 15 | 24 | 140 | 200 | 110 | 170 | 11 | 12 | 86 | 121 |
| -50 | 19 | 9.5 | | | | | | | | | | | 98 | 138 |
| -65 | | | | | | | | | | | | | | |

*1: AO dimension indicates the dimension at the time of shipment.

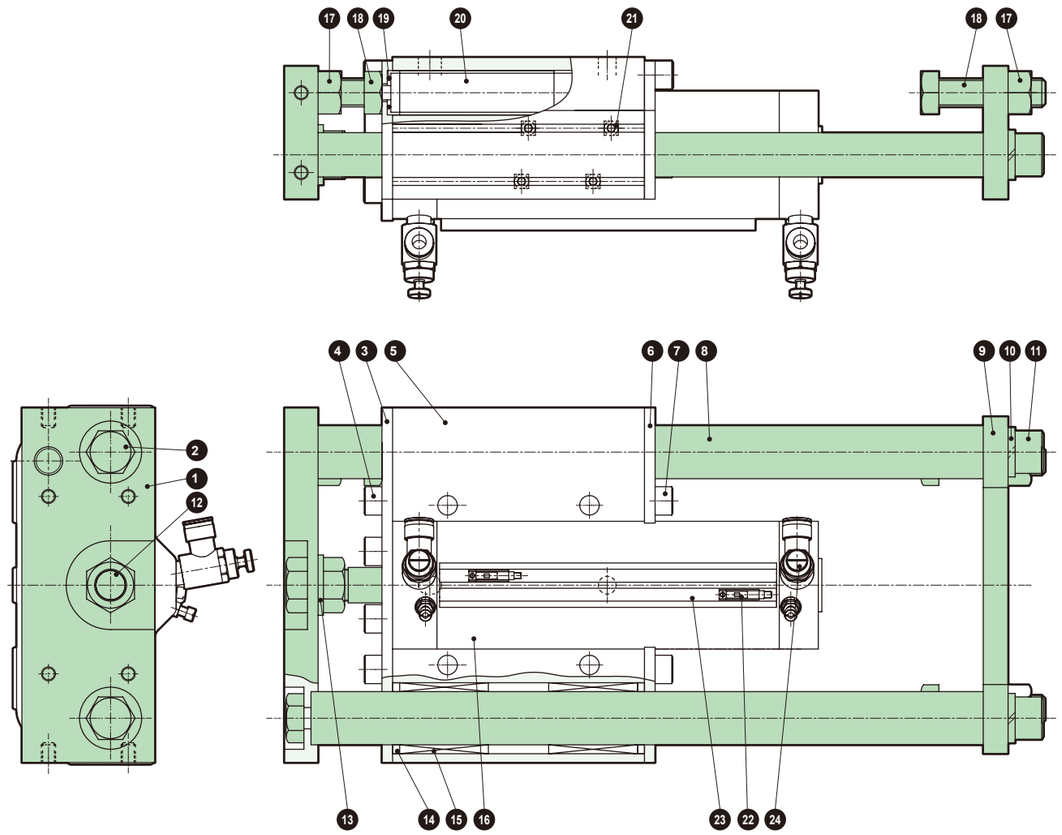
***2: For dimensions with each switch, please refer to P. 1130, 1131.**





## Internal Structure Diagram/Material

●HRL-1



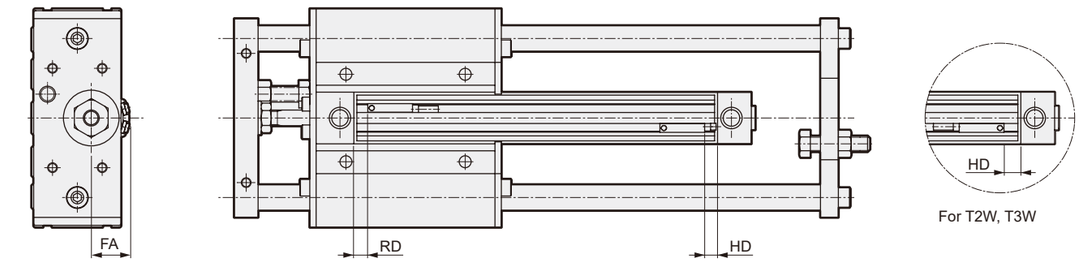

| Part No. | Part Name | Material | Remarks | Part No. | Part Name | Material | Remarks |
|---|---|---|---|---|---|---|---|
| 1 | Head plate | Steel | Zinc Chromate | 13 | Plain Washer | Steel | Zinc Chromate |
| 2 | Low head Hexagon Socket Head Cap Screw (05 to 50 kg) | Alloy Steel | Zinc Chromate | 14 | Combination seal | Synthetic rubber | 15H, 65 kg only |
| | Hexagon Bolt (65 kg) | Steel | Zinc Chromate | 15 | Ball bush | | |
| 3 | Body plate (2) | Steel | Zinc Chromate | 16 | Super Micro Cylinder | | SCM (CKD) |
| 4 | Hexagon Socket Head Cap Screw | Alloy Steel | Black Oxide | | Round shaped cylinder, Drop prevention type | | SCM-Q (CKD) |
| 5 | Cylinder Body | Aluminum Alloy | Anodized, Painted | 17 | Hexagon Nut | Steel | Zinc Chromate |
| 6 | Body plate (1) | Steel | Zinc Chromate | 18 | Hexagon Bolt | Steel | Zinc Chromate |
| 7 | Hexagon Socket Head Cap Screw | Alloy Steel | Black Oxide | 19 | O-ring | Nitrile Rubber | 25 to 65 kg only |
| 8 | Slide shaft | Steel | Industrial Chrome Plating | 20 | Shock Absorber | | |
| 9 | Joint plate | Steel | Zinc Chromate | 21 | Square Nut | Steel | Nickel Plating |
| 10 | Spring washer | Steel | Black Oxide Finish (30, 50 kg only) | 22 | Switch | | |
| 11 | Hexagon Socket Head Cap Screw | Alloy Steel | Black Oxide | 23 | Mounting Rail | Aluminum Alloy, Double-sided tape | |
| 12 | Joint pin | Steel | Zinc Chromate | 24 | Speed Controller | | SC3W (CKD) |

Note: Speed controllers are shipped with the product.

## HRL-1 Series External Dimensions Diagram with Switch

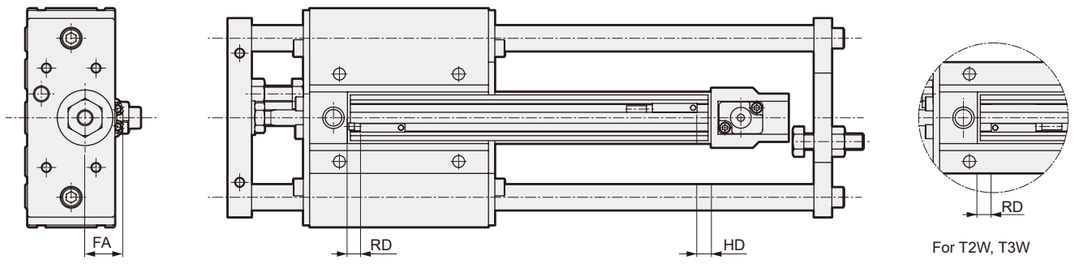
●T0, T5, T2, T2□3, T3, T3P, T2W, T3W, T2WL

• HRL-1




| Code / Model No. | FA | T0/T5 | T2/T2R T3/T3P | T2W/T3W T2WL | T0/T5 | T2/T2R T3/T3P | T2W/T3W T2WL |
|---|---|---|---|---|---|---|---|
| | | RD | | | HD | | |
| HRL-1□-05 | 19.5 | 7.5 | 7.5 | 9.5 | 3.0 | 6.5 | 8.5 |
| -10 | 22 | 8.5 | 8.5 | 10.5 | 2.0 | 5.5 | 7.5 |
| -15 | 25.5 | 9.5 | 9.5 | 11.5 | 3.0 | 6.5 | 8.5 |
| -15H | | | | | | | |
| -25 | 30 | 11.5 | 11.5 | 13.5 | 5.0 | 8.5 | 10.5 |
| -50 | 35.5 | 13.0 | 13.0 | 15.0 | 7.5 | 11.0 | 13.0 |
| -65 | 42.5 | 13.0 | 13.0 | 15.0 | 7.5 | 11.0 | 13.0 |

• HRL-1-□-Q




| Code / Model No. | FA | T0/T5 | T2/T2R T3/T3P | T2W/T3W | T0/T5 | T2/T2R T3/T3P | T2W/T3W |
|---|---|---|---|---|---|---|---|
| | | RD | | | HD | | |
| HRL-1□-05-Q | 19.5 | 4.0 | 7.5 | 9.5 | 6.5 | 6.5 | 8.5 |
| -10-Q | 22 | 5.0 | 8.5 | 10.5 | 5.5 | 5.5 | 7.5 |
| -15-Q | 25.5 | 6.0 | 9.5 | 11.5 | 6.5 | 6.5 | 8.5 |
| -15H-Q | | | | | | | |
| -25-Q | 30 | 8.0 | 11.5 | 13.5 | 8.5 | 8.5 | 10.5 |
| -50-Q | 35.5 | 9.5 | 13.0 | 15.0 | 11.0 | 11.0 | 13.0 |
| -65-Q | 42.5 | 9.5 | 13.0 | 15.0 | 11.0 | 11.0 | 13.0 |

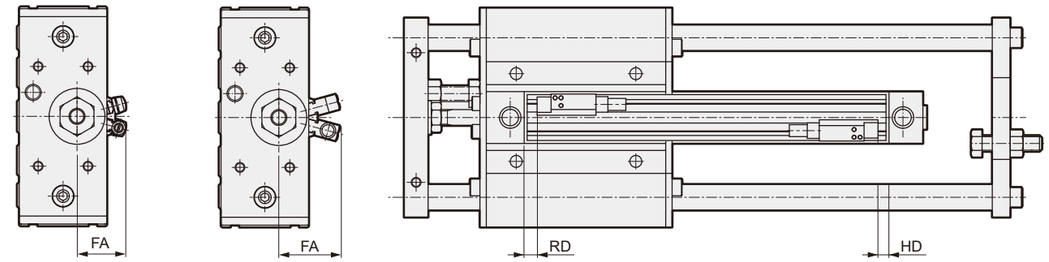




## HRL-1 Series External Dimensions Diagram with Switch

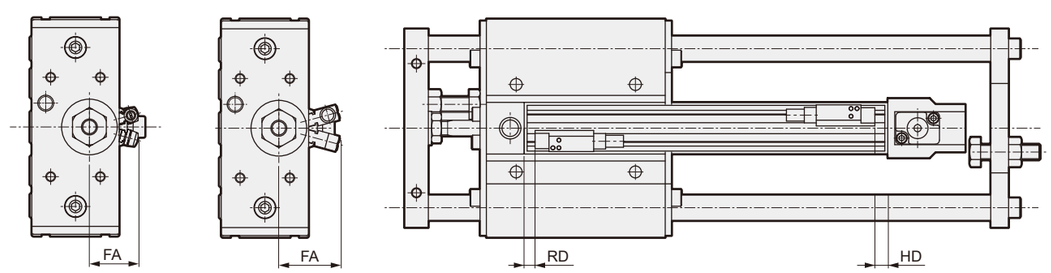
●T8H/V, T2JH/V, T1H/V, T2YD, T2YDT

• HRL-1




| Code / Model No. | T8H, T2JH | T2YD□, T1H | T1, T2J, T2YD□ | T8 | T1, T2J, T2YD□ | T8 |
|---|---|---|---|---|---|---|
| | FA | | RD | | HD | |
| HRL-1□-05 | 24.0 | 29.5 | 6.5 | 1.5 | 5.5 | 0.5 |
| -10 | 26.5 | 32.0 | 7.5 | 2.5 | 4.5 | 0.0 |
| -15 | 30.0 | 35.5 | 8.5 | 3.5 | 5.5 | 0.5 |
| -15H | | | | | | |
| -25 | 34.5 | 40.0 | 10.5 | 5.5 | 7.5 | 2.5 |
| -50 | 40.0 | 45.5 | 12.0 | 7.0 | 10.0 | 5.0 |
| -65 | 47.0 | 52.5 | 12.0 | 7.0 | 10.0 | 5.0 |

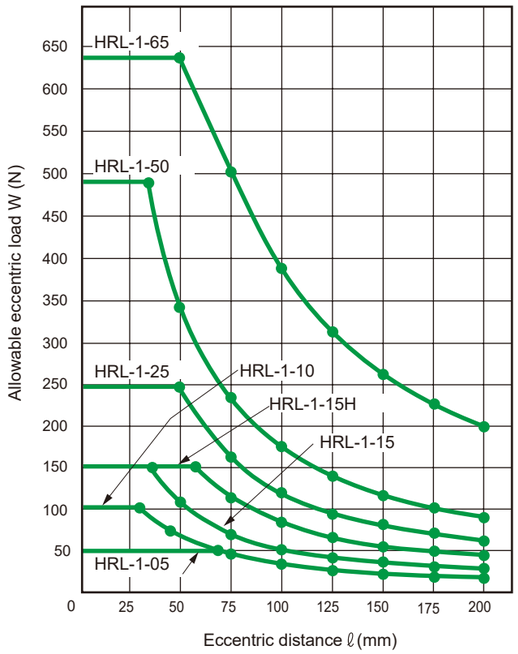
• HRL-1-□-Q

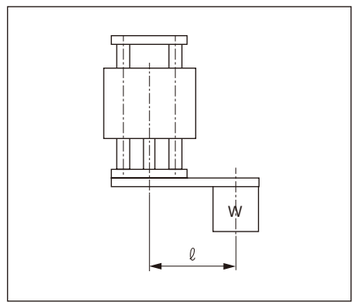


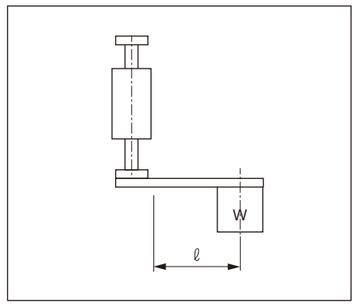

| Code / Model No. | T8H, T2JH | T2YD□, T1H | T1, T2J, T2YD* | T8 | T1, T2J, T2YD* | T8 |
|---|---|---|---|---|---|---|
| | FA | | RD | | HD | |
| HRL-1□-05-Q | 24.0 | 29.5 | 6.5 | 1.5 | 5.5 | 0.5 |
| -10-Q | 26.5 | 32.0 | 7.5 | 2.5 | 4.5 | 0.0 |
| -15-Q | 30.0 | 35.5 | 8.5 | 3.5 | 5.5 | 0.5 |
| -15H-Q | | | | | | |
| -25-Q | 34.5 | 40.0 | 10.5 | 5.5 | 7.5 | 2.5 |
| -50-Q | 40.0 | 45.5 | 12.0 | 7.0 | 10.0 | 5.0 |
| -65-Q | 47.0 | 52.5 | 12.0 | 7.0 | 10.0 | 5.0 |

## Allowable eccentric load

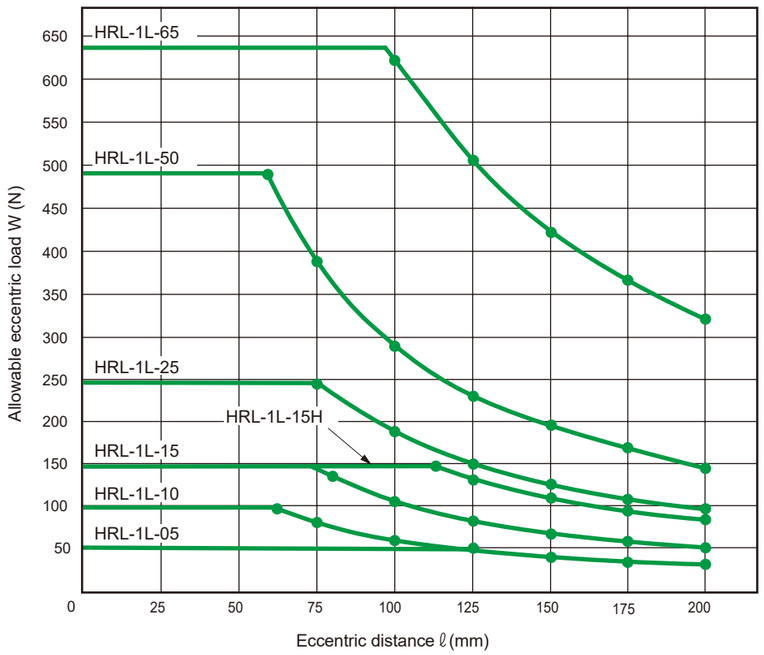
● HRL-1 (Basic Type)




HRL-1L (Long Body Type)








Pneumatic Equipment

# To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for Cylinder Switches, see P. 1512.

Individual Precautions: Hybrid Robot

## Design / Selection

### 1. About lubrication

**CAUTION**

■ Cylinder

Can be used without lubrication, but if lubricating, please use turbine oil type 1 ISO VG32. Using other lubricating oils will cause abnormalities in the packing, resulting in malfunction. If lubricating, be careful not to run out of oil. If oil runs out, operation will become unstable.

### 2. Service life

**CAUTION**

■ The service life of the unit is greatly affected by the service life of each pneumatic device.

Since general pneumatic equipment is used, the number of operations is about 3 to 5 million times, and the travel distance is about 1,000 km. (Since usage conditions, operating environment, etc. greatly affect the service life, the above values are not guaranteed values)

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site(https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual.